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Knowledge, Attitudes, and Practices Toward Rubber Dam Application Among Patients from Various Regions of Saudi Arabia: A Cross-Sectional Study

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Abstract **Objectives:** To ensure the best possible infection control, improve visibility, and increase treatment safety, rubber dam isolation is regarded as the gold standard in operational and endodontic dentistry. Despite its therapeutic benefits, its use is still relatively uncommon, and little research has been done on public acceptance and awareness. This study aimed to assess the Saudi population's knowledge, attitudes, and practices (KAP) regarding rubber dam usage during dental procedures. **Methods:** Data were collected from January to February 2025, and a cross-sectional online survey was carried out throughout Saudi Arabia using a non-probability snowball sampling technique. 510 participants who were in good physical and mental health and had previously received restorative dental treatment took part in the study. Data was collected using a twenty-item questionnaire covering demographics, knowledge, attitudes, and practices questions regarding the use of rubber dams. Descriptive statistics and Pearson's chi-square tests were used to examine associations in the data, with $p<0.05$ being significant. **Results:** The majority of participants (91.8%) accurately stated that the primary function of the rubber dam was to isolate the teeth from impurities, and 95.7% acknowledged that it also improved infection control. In terms of attitudes, 97.8% of respondents would approve its use if their dentist suggested it, and 91.6% thought that it is important for dental care. But only 44.3% had spoken to their dentist about its use. KAP scores were shown to be significantly correlated with nationality, age, gender, and educational attainment. Younger participants, females, and those with higher education showed higher KAP scores. **Conclusion**: The study reveals that participants are generally well-informed and supportive of the benefits of rubber dams. However, the communication gap between dentists and patients highlights the need for enhanced educational efforts and a greater emphasis on incorporating rubber dam use into routine clinical practice to ensure patient safety and improve treatment outcomes. The high willingness to accept its use highlights significant potential for broader clinical integration

Key Words Rubber dam, patient awareness, infection control, restorative dentistry, Saudi Arabia

INTRODUCTION

Endodontic and restorative procedures are commonly used to treat teeth affected by trauma or caries. Maintaining proper isolation of the tooth during these treatments is crucial to prevent contamination from saliva. This lowers the chance of re-infection and restoration failure by ensuring that restorative materials adhere to the tooth structure effectively. It also protects the dentist and the patient from possible microorganism exposure. The stability of the restoration may be adversely affected by inadequate bonding or the emergence of secondary caries [1-3]. The gold standard for isolating teeth during operative and endodontic procedures is still the rubber dam, which Barnum first used in 1864. It is acknowledged as a crucial auxiliary for attaining successful isolation in endodontic procedures. By minimizing microbiological contamination and drastically lowering the possibility of patients inadvertently ingesting or aspirating foreign materials [4]. The use of rubber dams during dental treatments improves the outcome of root canal therapy while addressing safety concerns [5]. The American Association of Endodontists' quality assurance guidelines state that an aseptic method with rubber dam isolation whenever possible is the best way to accomplish optimal canal cleaning, shaping, disinfection, and obturation.

Despite being seen as necessary in endodontic therapy, the use of rubber dams is still not generally accepted by many practitioners, even though wider usage has long been suggested [6,7]. According to a Lynch and McConnell study, 57% of dentists found putting rubber dams challenging and thought the process was uninteresting [8]. The protective benefits of rubber dams are well known; they protect patients from aspirating dental instruments, lower the risk of cross-infection, improve visibility and access during procedures, prevent soft tissue injuries from hand or rotary tools, and help with limited soft tissue retraction [3,9-11]. Nonetheless, a number of obstacles prevent dentists from routinely using them, such as low patient acceptance, the expense of rubber dam equipment, insufficient training, the perception of application difficulties, the extra time required for placement, and financial constraints [7]. According to previous study rubber dam utilization was typically low in both North America and the United Kingdom, according to Going and Sawinski [12]. Similarly, even during root canal therapy, Jenkins *et al.* discovered that RDs were not frequently used [13]. Approximately 5% of dentists in the National Health Service in Great Britain reported using RDs more frequently than their private-practice counterparts [14]. Furthermore, Marshall and Page found that RDs were used in 10.9% of endodontic treatments but just 1.4% of surgical procedures [15]. Understanding how patients and the general public perceive the use of rubber dams in dentistry is crucial for raising awareness and improving acceptance of this important tool. Rubber dams are essential for ensuring proper isolation during dental procedures, which enhances treatment success and reduces the risk of contamination or infection. Despite their benefits, to the best of our knowledge, limited evidence exists examining public KAP regarding rubber dam use, globally in general, and particularly in Saudi Arabia. In Saudi Arabia, where public awareness of oral health is steadily growing, exploring these perceptions is particularly important. This study was designed with that focus in mind, aiming to fill a critical gap by assessing how the public understands and views rubber dam use. The primary objective was to assess the Saudi population's knowledge, attitudes, and practices regarding rubber dam use. Secondary objectives included identifying demographic predictors of KAP scores and subgroup variations.

METHODOLOGY

An observational study with a cross-sectional design aims to evaluate awareness of rubber dam placement among the Saudi subpopulation. The current study was conducted online across all regions of Saudi Arabia using various social media platforms between January 1 and February 28, 2025. The questionnaire was available in both Arabic and English to maximize accessibility and ensure participants could respond in their preferred language. The inclusion criteria were adults aged 18 years or older, residing in Saudi Arabia, who were medically and mentally fit, and had visited a dental clinic for restorative treatment. The exclusion criteria were participants under the age of 18 years, who had not visited a dental clinic for restorative treatment, participants not living in Saudi Arabia, and medically and mentally unfit participants. A total of 510 participants were recruited using a non-probability snowball sampling technique. Initial participants were approached through social media and were asked to share the survey link within their networks. Although the sample size was not calculated using a formal power analysis, it exceeded the minimum commonly recommended for population surveys and was considered sufficient for the study's descriptive and inferential analyses. Data collected through self-administered, structured, and validated questionnaires. Face and content validation was done by a dental public health specialist. Pilot testing led to minor wording changes to improve clarity and comprehension The questionnaire consists of 20 questions divided into four sections. The first section includes six general demographic questions: gender, age, nationality, education level, monthly income level, and region. The knowledge section of the questionnaire includes four questions (Does the use of a rubber dam benefit dental procedures by providing better visibility and protection against contamination?, Can using a rubber dam during dental treatment lead to improved infection control and reduced risk of postoperative complications?, Is the primary purpose of a rubber dam in dental procedures to isolate the tooth being treated from saliva and contaminants?, A rubber dam is primarily used to clean teeth during a dental procedure ?), Five questions were used to measure participants attitude towards rubber dam use (Do you think it is important for dentists to use rubber dams during procedures?, Would you feel more confident in the safety of your dental treatment if a rubber dam was used?, Are you comfortable with the idea of using a rubber dam during dental procedures?, Do you believe using a rubber dam enhances the overall experience of dental treatment?, Would you agree to the use of a rubber dam if your dentist recommended it during your next procedure?). The practice section of the questionnaire includes five questions (Have you ever undergone a dental procedure where a rubber dam was used?, Do you discuss the use of a rubber dam with your dentist before a procedure?, If you have experienced the use of a rubber dam, did you find it uncomfortable during the procedure?, In your opinion, does the use of a rubber dam contribute to a more efficient dental procedure?Would you recommend the use of a rubber dam to others based on your experience?). The questionnaire was piloted on a small group for clarity and relevance, with necessary adjustments made. Its internal consistency was confirmed using Cronbach's alpha, which showed a satisfactory value of 0.78.

Statistical Analysis

The responses were coded and entered into SPSS version 21 for statistical analysis. Knowledge, attitude, and practice responses were binary (yes/no) and analyzed as frequencies for descriptive and subgroup comparisons using Pearson's

Chi-square test. To minimize potential bias, the questionnaire was anonymous, participation was voluntary, and inclusion/exclusion criteria were strictly followed.

Ethical Consideration

The University of Hail's Institutional Review Board granted ethical permission for this study (approval number: H-2024-245). Informed consent was obtained from all participants before data collection commenced, which included detailed information about the proposed study.

RESULT

This study involved 510 participants in all. Most respondents (n = 334; 65.5%) were in the 18–32 age range, followed by those in the 33–49 age range (n = 139; 27.3%) and those 50 years of age or over (n = 37; 7.3%). Just 9 participants (1.8%) were classified as non-Saudi, indicating that the participantswere primarily Saudi in terms of nationality (n = 501; 98.2%). The Northern region of Saudi Arabia (n = 335; 65.7%) was the region of the majority participants, followed by the Central region (n = 83; 16.3%), the Western and Southern regions combined (n = 69; 13.5%), and the Eastern region (n = 23; 4.5%)There were 216 female participants (42.4%) and 294 male individuals (57.6%).Regarding educational background, 91 participants (17.8%) had finished school-level education, 64 participants (12.5%) had a diploma, and 355 participants (69.6%) had a university degree. Respondents' monthly income levels varied: 179 (35.1%) said they made less than 2,000 SAR, 96 (18.8%) said they made between 2,001 and 5,000 SAR, 88 (17.3%) said they made between 5,001 and 10,000 SAR, and 147 (28.8%) said they made more than 10,000 SAR (Table 1).

Table 2 present the association between the participants' sociodemographic data and their awareness of the use of rubber dams in dental operations. There was no statistically significant correlation (p = 0.307) between age and the notion that rubber dams improve visibility and lower pollution during procedures. Among participants of all ages, 323 (96.7%) of those in the 18–32 age group, 132 (95%) of those in the 33–49 age group, and 34 (91.9%) of those in the 50+ age group agreed with this statement. Likewise, no noteworthy correlations were found between this belief and other sociodemographic factors, such as region (p = 0.434), income (p = 0.867), gender (p = 0.631), nationality (p = 0.317), or education level (p = 0.631).Nonetheless, the awareness that the use of rubber dams enhances infection control and reduces surgical complications was substantially correlated with age group (p = 0.001), nationality (p = 0.004), and educational attainment (p = 0.006). 324 (97%) of participants in the 18–32 age group said "yes," compared to 133 (95.7%) in the 33–49 age group. For this question, however, there were no significant correlations with region (p = 0.499), income (p = 0.089), or gender (p = 0.035). Nationality (p = 0.004), gender (p = 0.006), and educational attainment (p = 0.035) were found to have statistically significant relationships with the proper knowledge that the main goal of rubber dam use is to isolate the teeth from saliva and pollutants. 190 females (88%), compared to 278 males (94.6%), gave accurate answers. Only 5 (55.6%) of the non-Saudis correctly answered, while 463 (92.5%) of the Saudis did. 326 (91.8%) of university graduates, 63 (98.4%) of diploma holders, and 79 (81.8%) of school-level participants correctly answered, indicating that educational level also played a contribution. But there were no noteworthy correlations with age group (p = 0.621), area (p = 0.338), or income (p = 0.303). However, there was no significant correlation found between any sociodemographic category and misconceptions about the purpose of the

Table 1: Demographic Data of the Study Participants

Variables	N (%)
Gender	
Male	294(58%)
Female	216 (42%)
Age-group	
18-32	334 (65.5%)
33-49	139 (27.3%)
50-older	37 (7.3%)
Nationality	
Saudi	501(98.2%)
Non-Saudi	9(1.8%)
Region	
Center of Saudi	83 (16.3%)
West and south of Saudi	69 (13.5%)
North of saudi	335 (65.7%)
Estern	23 (4.5%)
Level of education	
School	91(17.8%)
Diploma	64 (12.5%)
University	355 (69.6%)
Income	
Less than 2000	179 (35.1%)
2001-5000	96 (18.8%)
5001-10000	88 (17.3%)
More than 10000	147 (28.8%)

Table 2: Association Between Participants' Knowledge of Rubber Dam Benefits and Sociodemographic Variables

No.	Knowledge questions	Age-group	Nationality	Region	Gender	Level of education	Income
1	Does the use of a rubber dam benefit dental procedures by providing better visibility and protection against contamination?	0.307	0.317	0.434	0.631	631	0.867
2	Can using a rubber dam during dental treatment lead to improved infection control and reduced risk of postoperative complications?	0.001*	0.053	0.303	0.536	0.766	0.495
3	Is the primary purpose of a rubber dam in dental procedures to isolate the tooth being treated from saliva and contaminants?	0.806	0.004*	0.499	0.006*	0.035	0.089
4	A rubber dam is primarily used to clean teeth during a dental procedure?	0.278	0.234	0.966	0.338	0.077	0.621

Table 3: Association Between Participants' Attitudes Toward Rubber Dam Use and Sociodemographic Variables

No.	Attitude questions	Age-group	Nationality	Region	Gender	Level of education	Income
1	Do you think it is important for dentists to use rubber dams during procedures?	0.378	0.033	0.166	0.145	0.794	0.964
2	Would you feel more confident in the safety of your dental treatment if a rubber dam was used?	0.119	0.146	0.381	0.251	0.558	0.200
3	Are you comfortable with the idea of using a rubber dam during dental procedures?	0.094	0.067	0.582	0.489	0.606	0.735
4	Do you believe using a rubber dam enhances the overall experience of dental treatment?	0.057	0.025	0.324	0.047	0.147	0.983
5	Would you agree to the use of a rubber dam if your dentist recommended it during your next procedure?	0.018	0.014	0.085	0.533	0.696	0.888

rubber dam, particularly the idea that its main purpose is to clean teeth. These included education level (p = 0.127), income (p = 0.621), region (p = 0.768), gender (p = 0.607), age (p = 0.453), and nationality (p = 0.283) (Table 2).

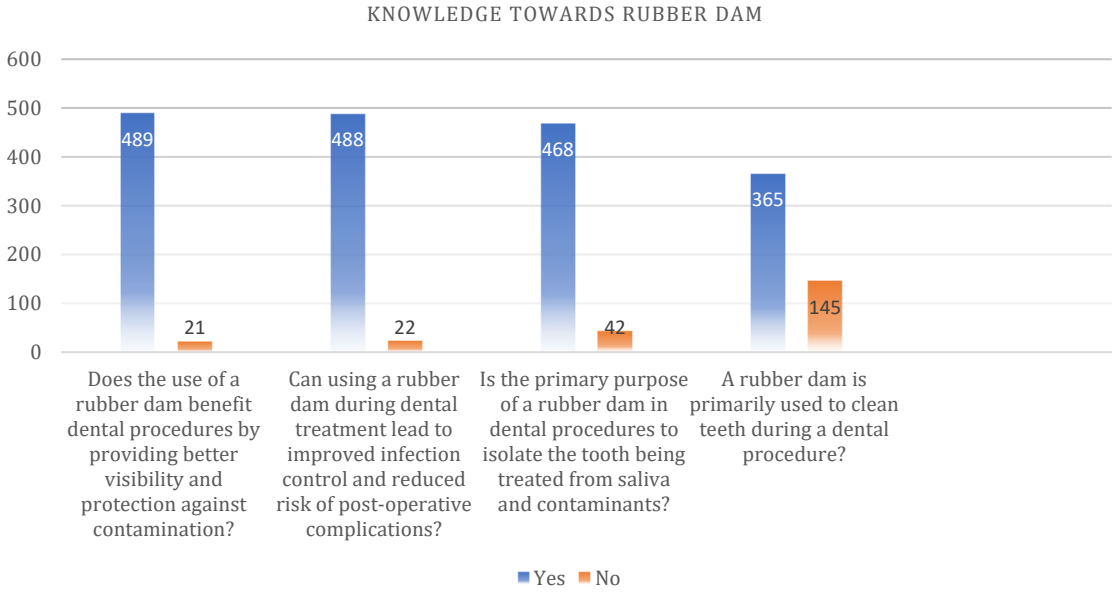
Table 3 present the association between participants' opinions regarding the use of rubber dams and different sociodemographic characteristics. Nationality and the opinion that rubber dams are crucial for dental operations were found to be statistically significantly correlated (p = 0.033). Six (66.7%) of the non-Saudi participants agreed with this assertion, while 461 (92%) of the Saudi respondents did. Age group (p = 0.378), gender (p = 0.145), region (p = 0.166), income (p = 0.964), and education level (p = 0.794) did not significantly correlate with any of these factors. None of the sociodemographic factors showed any significant correlations when participants were asked if using a rubber dam would increase their confidence in the safety of their dental treatment. These included income (p = 0.200), region (p = 0.381), gender (p = 0.251), age group (p = 0.119), nationality (p = 0.146), and educational attainment (p = 0.558). Similarly, there were no discernible correlations between sociodemographic factors and participants' comfort level with the concept of using rubber dams. Non-significant findings were found for age (p = 0.094), nationality (p = 0.067), gender (p = 0.489), region (p = 0.582), income (p = 0.735), and educational attainment (p = 0.606). In response to the query, "Do you think that using a rubber dam improves the overall experience of receiving dental care?" Gender (p = 0.047) and nationality (p = 0.025) showed significant relationships. Males and Saudi nationals were more likely to agree; 465 (92.8%) Saudis and 6 (66.7%) non-Saudis said "yes." High levels of agreement were also demonstrated by participants with high school education (n = 88, 95.7%) and university degrees (n = 333, 93.8%), while the relationship between education level and agreement was not statistically significant (p = 0.147). There were no noteworthy correlations found with area (p = 0.324), wealth (p = 0.983), or age (p = 0.057). Lastly, the query: "If your dentist suggested using a rubber dam, would you consent to its use?" showed significant correlations with education level (p = 0.696), nationality (p = 0.014), and age group (p = 0.018). Those between the ages of 18 and 32 had the highest degree of agreement (n = 330, 98.8%), followed by those between the ages of 33 and 49 (n = 135, 97.1%), and those over 50 (n = 34, 91.9%). Furthermore, compared to 7 (77.8%) non-Saudi participants, 492 (98.2%) Saudi participants agreed. Participants with a university degree indicated the highest level of agreement (n = 348, 97%), followed by those with a school education (n = 88, 95.7%). There were no noteworthy correlations seen for gender (p = 0.533), region (p = 0.085), or income (p = 0.888) (Table 3).

Table 4 looks at the relationships between different sociodemographic factors and the experiences and behaviors of participants regarding the use of rubber dams. When asked if they had ever had a dental operation where a rubber dam was utilized, the respondents' age group (p = 0.038) and region (p = 0.017) showed a statistically significant correlation. In the 18–32 age group, 145 (43.4%) of the participants said "yes," while 43 (30.9%) in the 33–49 age group and 16 (43.2%) in the 50+ age group did the same. There were also noticeable regional variations: the Eastern region had the greatest affirmative response rates (n = 135, 40.3%), followed by the Central region (n = 43, 51.8%) and the Northern region (n = 49, 28.9%). This question did not significantly correlate with nationality (p = 0.097), gender (p = 0.103), income (p = 0.219), or educational attainment (p = 0.185).

Education level was substantially correlated with participants' propensity to talk to their dentist about the usage of rubber dams before to a procedure (p = 0.006). 213 (60%) of university graduates did not report having such conversations, compared to 142 (40%) who did. In contrast,

Table 4: Association Between Rubber Dam-Related Practices and Sociodemographic Variables

No.	Practice questions	Age-group	Nationality	Region	Gender	Level of education	Income
1	Have you ever undergone a dental procedure where a rubber dam was used?	0.038	0.097	0.017	0.103	0.185	0.219
2	Do you discuss the use of a rubber dam with your dentist before a procedure?	0.526	0.157	0.264	0.345	0.006	0.720
3	If you have experienced the use of a rubber dam, did you find it uncomfortable during the procedure?	0.119	0.575	0.202	0.404	0.001	0.108
4	In your opinion, does the use of a rubber dam contribute to a more efficient dental procedure?	0.175	0.280	0.792	0.552	0.133	0.586
5	Would you recommend the use of a rubber dam to others based on your experience?	0.213	0.141	0.717	0.509	0.151	0.034


KNOWLEDGE TOWARDS RUBBER DAM
600
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145
Does the use of a rubber dam benefit dental procedures by providing better visibility and protection against contamination?
Can using a rubber dam during dental treatment lead to improved infection control and reduced risk of post-operative complications?
Is the primary purpose of a rubber dam in dental procedures to isolate the tooth being treated from saliva and contaminants?
A rubber dam is primarily used to clean teeth during a dental procedure?
Yes
No

Figure 1: Association Between Participants' Knowledge and Rubber Dam

38 (46.3%) of participants at the school level and 31 (48%) of diploma holders acknowledged talking about the use of rubber dams. Age group (p = 0.526), country (p = 0.157), gender (p = 0.345), region (p = 0.264), and income (p = 0.720) did not show any significant relationships. Once more, there was a strong correlation between education level and whether or not they felt that using rubber dams during procedures was painful (p = 0.001). Of those with a university degree, 92 (24.9%) reported discomfort, compared to 263 (74.1%) who did not. Likewise, respondents at the school level and those with diplomas displayed similar patterns. Reports of discomfort were not substantially impacted by age (p = 0.119), gender (p = 0.404), income (p = 0.108), area (p = 0.202), or nationality (p = 0.575). There was no significant correlation found between any sociodemographic condition and the perceived effectiveness of dental procedures involving the use of rubber dams. Rubber dams improve procedural efficiency, according to 301 (90.8%) of participants aged 18–32 and 444 (88.6%) of Saudi nationals; however, the relationships with age (p = 0.175), nationality (p = 0.280), gender (p = 0.552), region (p = 0.792), income (p = 0.586), and education level (p = 0.133) were not statistically significant. Finally, a statistically significant correlation (p = 0.034) was found between participants' readiness to promote the usage of rubber dams based on their own experiences and their income. 155 (86.6%) of those making less than 2,000 SAR said they would suggest it, while 24 (13.4%) disagreed. There was a positive trend across age groups (p = 0.213), with younger people more likely to support the use of rubber dams, however this trend was not statistically significant. Education level (p = 0.151), gender (p = 0.509), region (p = 0.717), and nationality (p = 0.141) did not show any significant relationships (Table 4).

Association Between Participants Knowledge and Rubber Dam

Just 21 individuals (4.1%) disagreed with the strong majority (n = 489; 95.9%) who felt that rubber dams improve dental treatments by increasing visibility and lowering contamination. Similarly, just 22 respondents (4.3%) disagreed with the 488 respondents (95.7%) who acknowledged that rubber dams improve infection control and reduce the risk of postoperative sequelae. 468 participants (91.8%) correctly recognized the rubber dam's

major function as protecting the teeth from saliva and other impurities, while 42 participants (8.2%) gave the wrong response. However, the majority of participants (n = 365; 71.6%) disagreed with the idea that the primary function of a rubber dam is to clean teeth, while 145 persons (28.4%) held this incorrect belief (Figure 1).

Association between attitudes of participants and rubber dam

While 43 (8.4%) individuals disagreed, the majority of participants (n = 467; 91.6%) said it was crucial for dentists to utilize rubber dams during treatments. 471 individuals (92.4%) said they would feel surer about treatment safety if a rubber dam were utilized, whereas 39 participants (7.6%) said they wouldn't. In a similar vein, 485 (95.1%) respondents said they were at ease with the concept of using rubber dams, while only 25 (4.9%) said they were uncomfortable. 39 respondents (7.6%) disagreed with the 471 respondents (92.4%) who thought that using rubber dams improved the overall dental experience. Interestingly, just 11 individuals (2.2%) stated they would refuse to use a rubber dam, while nearly all participants (n = 499; 97.8%) claimed they would consent to its usage if their dentist advised it (Table 5).

Association between practice of participants and rubber dam

In terms of prior experience, 204 participants (40%) had never had a dental operation including the use of a rubber dam, whereas 306 participants (60%) had. 226 respondents (44.3%) indicated that they had discussed the usage of rubber dams with their dentist before to treatment, whereas 284 (55.7%) replied that they had not. Of those who had previously used rubber dams, 350 (68.6%) experienced some discomfort, whereas 160 (31.4%) reported none at all. 451 people (88.4%) thought rubber dams improved procedure efficiency, while 59 participants (11.6%) disagreed. Lastly, 433 participants (84.9%) stated that they would suggest rubber dam use to others based on their personal experience, whereas 77 participants (15.1%) disagreed (Table 5).

DISCUSSION

In the current study, a total of 510 participants. The sample represented nearly equal genders, with 216 (42.4%) females and 294 (57.6%) males. To our best knowledge, this is the second of its kind of study in Saudi Arabia focused on public/patient's perspective towards rubber dam use. To our best knowledge, even globally, our concern area is not much researched. we found only one study related to our targeted population in Saudi Arabia. Patients have typically reported favourable experiences with rubber dam isolation. Alamassi *et al.* [16] found that 71.6% of patients felt comfortable during dental procedures involving a rubber dam, and 75.8% indicated a preference for its use in future treatments. In the present study, nearly 95% of participants reported feeling comfortable with rubber dam isolation, reflecting even greater acceptance and comfort compared to previous findings.

The present study found that 92% of participants responded positively to the question, *"Would you feel more confident in the safety of your dental treatment if a rubber dam was used?"* This strong level of confidence underscores the perceived benefits of rubber dam use in enhancing treatment safety. The primary advantage identified by patients was protection from inhaling or swallowing foreign objects, with 93.6% of participants acknowledging this benefit. These findings align with those of Alamassi *et al.*, [16] reinforcing the role of rubber dam isolation in improving patient confidence and ensuring a safer clinical environment.

According to our findings, 91.6% of participants thought it was crucial that dentists use rubber dams during treatments, showing that patients are well-aware of and appreciative of the advantages of doing so. This is consistent with the results of the Kaşıkçı and Kolunsağ Özbek study, where 94.7% of participants felt that using rubber dams is essential, demonstrating the general understanding of the importance of rubber dam [17].

Table 5. Summary of Participants' Knowledge, Attitudes, And Practices Regarding Rubber Dam Use

No.	Qs	Yes N (%)	No N (%)
Attitudes Towards Rubber Dam			
1	Do you think it is important for dentists to use rubber dams during procedures?	467 (91.6%)	43 (8.4%)
2	Would you feel more confident in the safety of your dental treatment if a rubber dam was used ?	471 (92.4%)	39 (7.6%)
3	Are you comfortable with the idea of using a rubber dam during dental procedures?	485 (95.1%)	25 (4.9%)
4	Do you believe using a rubber dam enhances the overall experience of dental treatment?	471(92.4%)	39 (7.6%)
5	Would you agree to the use of a rubber dam if your dentist recommended it during your next procedure?	499 (97.8%)	11 (2.2%)
Practice Towards Rubber Dam			
6	Have you ever undergone a dental procedure where a rubber dam was used?	204 (40%)	306 (60%)
7	Do you discuss the use of a rubber dam with your dentist before a procedure?	226 (44.3%)	284 (55.7%)
8	If you have experienced the use of a rubber dam, did you find it uncomfortable during the procedure?	160 (31.4%)	350 (68.6%)
9	In your opinion, does the use of a rubber dam contribute to a more efficient dental procedure?	451 (88.4%)	59 (11.6%)
10	Would you recommend the use of a rubber dam to others based on your experience?	433 (84.9%)	77 (15.1%)

Additionally, when a rubber dam was utilized, 92.4% of our participants said they felt more confident about the safety of their dental treatment. This is similar to the 96% of participants in the Kaşıkçı and Kolunsağ Özbek study who said they felt safe and at peace throughout such operations [17]. These findings imply that consistent use of rubber dams increases patient saifty and confidence, both of which are important for encouraging adherence to dental treatment.

Furthermore, 97.8% of research participants said they would agree to use a rubber dam if their dentist advised it, which is in line with the 97.3% of participants in the Kaşıkçı and Kolunsağ Özbek study who expressed a preference for using it in subsequent procedures [17]. This high degree of acceptance demonstrates the patients' confidence in their dentists' advice and their understanding of the advantages of using rubber dams.Notably, compared to the 27.3% in the Kaşıkçı and Kolunsağ Özbek study, 40% of our subjects reported having previously had a dental procedure with a rubber dam [17]. This discrepancy could be explained by differences in clinical procedures or by the difference of sample size between the two studies. Moreover, compared to the Kaşıkçı and Kolunsağ Özbek study, where 82.7% of participants reported knowing why a rubber dam was used [17]. Compared to 44.3% of our participants had been informed the reason of use of a rubber dam by their dentist before a procedure. This discrepancy might possibly result from the larger sample size in our study as we had 510 participants as opposed to 150 in the compared study.

A study conducted by Alzahrani *et al.* [18] in Saudi Arabia evaluated the knowledge, attitudes, and practices of dental students regarding the use of rubber dams in clinical procedures. The results indicated that although students exhibited adequate knowledge, their attitudes and practical application were inconsistent, with female students demonstrating more positive attitudes and better adherence to recommended practices. In comparison, the present study, which focused on public perceptions, revealed that nearly 96% of participants recognized the use of rubber dams as highly important, underscoring significant public awareness and support for their application in dental treatments. The use of a non-probability snowball sampling method and the skewed distribution of responses toward participants from the Northern region limit the representativeness and generalizability of the findings to the entire Saudi population

CONCLUSIONS

This study demonstrates strong public support for the use of rubber dams in dental procedures. A large majority of participants recognized the benefits of rubber dams in improving visibility and infection control. Additionally, majority of participants considered it crucial for dentists to incorporate rubber dams during treatment, and they would agree to their use if recommended by their dentist. Despite widespread support, less than half of participants had discussed the use of rubber dams with their dentist before treatment, suggesting a need for enhanced patient education and communication about this technique. These findings underscore the importance of improving awareness and understanding of rubber dam use, which can lead to safer, more effective dental procedures and greater patient comfort and confidence.

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